

STOCHASTIC COOLING SIMULATION OF ION BEAMS

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An effective accumulation and fast cooling of ion beams and antiprotons are key task of the accelerator facility, which is planned at GSI. A stochastic and an electron cooling are planned to use for obtaining of high cooled ion beams. The stochastic cooling is faster for hot ion beams giving possibility to accumulate effectively ions in a storage ring. In this paper a numerical algorithm for the stochastic cooling by Palmer method in the longitudinal phase space is presented. The algorithm is based on the Fokker - Plank equation with variable coefficients. Stochastic cooling simulations are needed to determinate optimal parameters of the cooling system where the minimal cooling time is reached.